

**Notice of Allowability**

Application No.

09/994,568

Examiner

Prenell P. Jones

Applicant(s)

CHO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/30/05.
2. ☒ The allowed claim(s) is/are 2-39.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some\* c) ☐ None of the:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/15/06.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.



ALPUS H. HSU  
PRIMARY EXAMINER

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. William Pieprz on February 15, 2006.

The application has been amended as follows:

Regarding claim 27; in line 1, change "A frequency" to "The frequency."

Regarding claim 34; in line 1, change "A frequency" to "The frequency."

Regarding claim 29; in line 8, insert after "table address", "of a first log function table."

Regarding claim 35; page 17, in line 14, insert after "table address;", "of a second log function table"

***Reason for Allowance***

2. Claims 2-39 are allowed over prior art.

The following is a statement of reasons for allowance: Applicant has canceled previously rejected claim 1 and amended previously objected claims.

Although the combined prior art discloses a wireless OFDM wherein the architecture includes the indirect or direct coupling of A/D converter, frequency synchronization, FFT, channel estimation, equalizer, estimation of phase rotation wherein residual frequency is monitored, and a control function associated with frequency synchronization, they fail to teach or suggest with respect to claims 2 and 4, compensating the data symbol of the input signal with the frequency offset estimated, which is associated with the step of compensating the frequency of the training signal, and compensating the data symbol with the estimating channel of a transformed frequency, received signals contain long and short training signals, estimate the frequency offset of short training signal to compensate the long training signal with the frequency offset of the short training signal in a coarse mode and re-compensate long training signal in a fine mode, with respect to claim 3, receiver signal contains one of both short and long training signals, wherein the frequency synchronizer estimates frequency offset of the training signal and compensates the training signal and data symbol with the estimated frequency offset, with respect to claims 5-12, a second demultiplexer for selectively outputting compensated signal from the frequency offset compensation sub-module, residual phase tracking sub-module including a pilot

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extractor, a second region controller for outputting a second log function table address corresponding to a residual phase value from a first de-multiplexer, with respect to claim 13, a residual phase compensator for compensating the data symbol with the residual phase of the data symbol estimated at the frequency synchronizer, and with respect to claim 18, compensating the data symbol with estimated channel obtained by performing FFT and tracking a residual phase of the estimated data symbol.

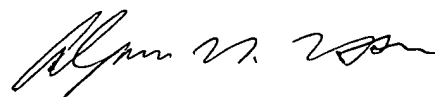
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prenell P. Jones whose telephone number is 571-272-3180. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Prenell P. Jones

February 15, 2006



ALPUS H. HSU  
PRIMARY EXAMINER